Remarks/Arguments

1. Information Disclosure Statement

Applicants note that cite no. B37 of an Information Disclosure Statement [hereinafter IDS] filed on March 24, 2005 and received by the United States Patent and Trademark Office [hereinafter USPTO] on March 28, 2005 was crossed off. To that end, cite no. B37, comprising a serial number, was improperly listed under U.S. Patent Documents. As a result, Applicants submit herewith a Supplemental Information Disclosure Statement [hereinafter SUPP IDS] properly re-listing cite no. B37 as cite D1 of SUPP IDS under Other Prior Art - Non Patent Literature Documents.

2. Rejections under 35 USC section 112, second paragraph

In the Office action, claim 3 was rejected under 35 USC section 112, second paragraph for allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. More specifically, claim 3 was rejected as allegedly being a duplicate of claim 2, and thus, failing to further limit the subject matter of claim. To that end, Applicants have amended claim 3 such that the same comports with the requirements of 35 USC section 112, second paragraph.

3. Rejections under 35 USC section 102

a. *Kim et al. (U.S. Patent 6,355,198)*

In the Office action, claims 1, 14, and 22 were rejected under 35 USC section 102 as allegedly being anticipated by United States Patent 6,355,198 to Kim et al. [hereinafter Kim]. To summarize the standard, rejections under section 102 are proper only when one prior art reference discloses every feature of the claimed invention so that there is no physical difference between the

reference and the claimed invention. See *In re Marshall*, 198 USPQ 44 (CCPA 1978). In addition, inchoate in any rejection pursuant to 35 USC section 102 is an obviousness rejection pursuant to 35 USC section 103. As a result, Applicants address any inchoate obviousness rejections along with the rejections under 35 USC section 102.

i. Claim 1

Claim 1, as amended, defines a method of patterning a substrate with a template having a mold, the method including, *inter alia*, positioning conformable material between the substrate and the mold; filling a volume defined between the mold and the substrate with the conformable material through capillary action between the conformable material and one of the mold and the substrate; controlling movement between the substrate and the mold to minimize tensile forces, associated with the capillary action, upon the mold; and solidifying the conformable material.

Applicants advocate this method in order control a thickness of the conformable material between the substrate and the mold. Specifically, Applicants' claimed invention involves minimizing tensile forces subjected upon the mold. To that end, minimizing the amount of tensile forces upon the mold by controlling movement between the substrate and the mold maximizes a thickness uniformity of the conformable material. See paragraph [0027].

Kim is completely silent with respect to controlling movement between a substrate and a mold to minimize tensile forces upon the mold, with the tensile forces being associated with a capillary action between a conformable material and one of the mold and the substrate during filling of a volume defined between the mold and the substrate with the conformable material. Rather, Kim is directed towards employing an article having a

plurality of indentations that upon contact with a surface of a substrate, form a plurality of channels, and thus a micromold. See column 10, lines 37-61. Further, a fluid is introduced adjacent one or more of the plurality of channels, wherein the fluid is able to flow into the channels via, *inter alia*, capillary action. See column 10, line 62 - column 11, line 8.

Kim has no mention of tensile forces associated with the capillary action, much less minimizing the tensile forces upon the mold. As a result, Kim does not direct his invention to controlling movement between a substrate and a mold to minimize tensile forces upon the mold, with the tensile forces being associated with a capillary action between a conformable material and one of the mold and the substrate during filling of a volume defined between the mold and the substrate with the conformable material. Moreover, Kim does not recognize the problem the Applicants address of minimizing tensile forces subjected upon the mold to maximize a thickness uniformity of the conformable material. See In re Nomiya, 184 USPQ 607, 612 (CCPA 1975)(finding that where prior art fails to recognize the problem at all, the claimed invention may be deemed patentable).

Based upon the foregoing, Applicants respectfully contend that Kim does not anticipate the invention defined by claim 1, as amended, and *prima facie* case of obviousness is not present with respect to claim 1, as amended.

ii. Claim 14

In addition to the arguments set forth above with respect to claim 1, claim 14, as amended, defines a method of patterning a substrate with a template having a mold, the method including, *inter alia*, positioning conformable material between the substrate and the mold; establishing a distance between the mold

and the substrate to facilitate filling a volume, defined between the mold and the substrate, with the conformable material through capillary action between the conformable material and one of the mold and the substrate; controlling the distance to minimize tensile forces, associated with the capillary action, upon the mold, such that a thickness uniformity of the conformable material is maximized; and solidifying the conformable material. Applicants contend that the argument set forth above with respect to claim 1 applies with equal weight here and that claim 14 defines an invention suitable for patent protection.

Furthermore, Kim is completely silent with respect to controlling movement between a substrate and a mold to minimize tensile forces upon the mold such that a thickness uniformity of a conformable material is maximized, with the tensile forces being associated with a capillary action between the conformable material and one of the mold and the substrate during filling of a volume defined between the mold and the substrate with the conformable material. As mentioned above, Kim is directed towards employing an article having a plurality of indentations that upon contact with a surface of a substrate, form a plurality of channels, and thus a micromold. See column 10, lines 37-61. Further, a fluid is introduced adjacent one or more of the plurality of channels, wherein the fluid is able to flow into the channels via, *inter alia*, capillary action. See column 10, line 62 - column 11, line 8.

Kim has no mention of minimizing the tensile forces upon the mold, much less minimizing the tensile forces upon the mold such that a thickness uniformity of the conformable material is maximized. As a result, Kim does not direct his invention to controlling movement between a substrate and a mold to minimize tensile forces upon the mold such that a thickness uniformity of

a conformable material is maximized, with the tensile forces being associated with a capillary action between the conformable material and one of the mold and the substrate during filling of a volume defined between the mold and the substrate with the conformable material. Moreover, Kim does not recognize the problem the Applicants address of minimizing tensile forces subjected upon the mold to maximize a thickness uniformity of the conformable material. See In re Nomiya, 184 USPQ 607, 612 (CCPA 1975) (finding that where prior art fails to recognize the problem at all, the claimed invention may be deemed patentable).

Based upon the foregoing, Applicants respectfully contend that Kim does not anticipate the invention defined by claim 14, as amended, and *prima facie* case of obviousness is not present with respect to claim 14, as amended.

iii. Claim 22

Claim 22, as amended, defines a method of patterning a substrate with a template, the method including, *inter alia*, forming conformable material on the substrate; placing the template in superimposition with the conformable material, with the template including a mold facing the conformable material; moving a sub-portion of the conformable material, through capillary action between the conformable material and one of the mold and the substrate, in a direction away from the substrate to wet a region of the mold and conform to a shape thereof, defining a complimentary shape; controlling movement between the substrate and the mold to minimize tensile forces, associated with the capillary action, upon the mold; and solidifying the conformable material.

Applicants respectfully contend that the argument set forth above with respect to claim 1 applies with equal weight here and that

claim 22, as amended, defines an invention suitable for patent protection.

b. *Lee et al. (U.S. Patent Appl. Publication 2003/0062334)*

In the Office action, claims 1, 14, and 22 were rejected under 35 USC section 102 as allegedly being anticipated by United States Patent Application Publication 2003/0062334 to Lee et al. [hereinafter Lee]. To summarize the standard, rejections under section 102 are proper only when one prior art reference discloses every feature of the claimed invention so that there is no physical difference between the reference and the claimed invention. See *In re Marshall*, 198 USPQ 44 (CCPA 1978). In addition, inchoate in any rejection pursuant to 35 USC section 102 is an obviousness rejection pursuant to 35 USC section 103. As a result, Applicants address any inchoate obviousness rejections along with the rejections under 35 USC section 102.

i. Claim 1

Claim 1, as mentioned above, defines a method of patterning a substrate with a template having a mold, the method including, *inter alia*, positioning conformable material between the substrate and the mold; filling a volume defined between the mold and the substrate with the conformable material through capillary action between the conformable material and one of the mold and the substrate; controlling movement between the substrate and the mold to minimize tensile forces, associated with the capillary action, upon the mold; and solidifying the conformable material.

As mentioned above, Applicants advocate this method in order control a thickness of the conformable material between the substrate and the mold. Specifically, Applicants' claimed invention involves minimizing tensile forces subjected upon the mold. To that end, minimizing the amount of tensile forces upon

the mold by controlling movement between the substrate and the mold maximizes a thickness uniformity of the conformable material. See paragraph [0027].

Lee is completely silent with respect to controlling movement between a substrate and a mold to minimize tensile forces upon the mold, with the tensile forces being associated with a capillary action between a conformable material and one of the mold and the substrate during filling of a volume defined between the mold and the substrate with the conformable material. Rather, Lee is directed towards bringing a mold, having a predetermined pattern structure containing a recessed portion and a protruded portion, into contact with a polymer material coated upon a substrate. See paragraph [0011]. The polymer material in contact with the protruded portion of the mold is then permeated into an empty space of the recessed portion of the mold through capillary action. See paragraphs [0011] and [0026]. The polymer mold is then removed and a desired polymer pattern is formed on the substrate. See paragraph [0034].

Lee has no mention of minimizing the tensile forces upon the mold, much less minimizing the tensile forces upon the mold such that a thickness uniformity of the conformable material is maximized. As a result, Lee does not direct his invention to controlling movement between a substrate and a mold to minimize tensile forces upon the mold such that a thickness uniformity of a conformable material is maximized, with the tensile forces being associated with a capillary action between the conformable material and one of the mold and the substrate during filling of a volume defined between the mold and the substrate with the conformable material. Moreover, Lee does not recognize the problem the Applicants address of minimizing tensile forces subjected upon the mold to maximize a thickness uniformity of the

conformable material. See In re Nomiya, 184 USPQ 607, 612 (CCPA 1975)(finding that where prior art fails to recognize the problem at all, the claimed invention may be deemed patentable).

Based upon the foregoing, Applicants respectfully contend that Lee does not anticipate the invention defined by claim 1, as amended, and *prima facie* case of obviousness is not present with respect to claim 1, as amended.

ii. Claim 14

In addition to the arguments set forth above with respect to claim 1, claim 14, as amended, defines a method of patterning a substrate with a template having a mold, the method including, *inter alia*, positioning conformable material between the substrate and the mold; establishing a distance between the mold and the substrate to facilitate filling a volume, defined between the mold and the substrate, with the conformable material through capillary action between the conformable material and one of the mold and the substrate; controlling the distance to minimize tensile forces, associated with the capillary action, upon the mold, such that a thickness uniformity of the conformable material is maximized; and solidifying the conformable material. Applicants contend that the argument set forth above with respect to claim 1 applies with equal weight here and that claim 14 defines an invention suitable for patent protection.

Furthermore, Lee is completely silent with respect to controlling movement between a substrate and a mold to minimize tensile forces upon the mold, with the tensile forces being associated with a capillary action between a conformable material and one of the mold and the substrate during filling of a volume defined between the mold and the substrate with the conformable material. Rather, Lee is directed towards bringing a mold, having a

predetermined pattern structure containing a recessed portion and a protruded portion, into contact with a polymer material coated upon a substrate. See paragraph [0011]. The polymer material in contact with the protruded portion of the mold is then permeated into an empty space of the recessed portion of the mold through capillary action. See paragraphs [0011] and [0026]. The polymer mold is then removed and a desired polymer pattern is formed on the substrate. See paragraph [0034].

Lee has no mention of minimizing the tensile forces upon the mold, much less minimizing the tensile forces upon the mold such that a thickness uniformity of the conformable material is maximized. As a result, Lee does not direct his invention to controlling movement between a substrate and a mold to minimize tensile forces upon the mold such that a thickness uniformity of a conformable material is maximized, with the tensile forces being associated with a capillary action between the conformable material and one of the mold and the substrate during filling of a volume defined between the mold and the substrate with the conformable material. Moreover, Lee does not recognize the problem the Applicants address of minimizing tensile forces subjected upon the mold to maximize a thickness uniformity of the conformable material. See In re Nomiya, 184 USPQ 607, 612 (CCPA 1975) (finding that where prior art fails to recognize the problem at all, the claimed invention may be deemed patentable).

Based upon the foregoing, Applicants respectfully contend that Lee does not anticipate the invention defined by claim 14, as amended, and *prima facie* case of obviousness is not present with respect to claim 14, as amended.

iii. Claim 22

Claim 22, as mentioned above, defines a method of patterning a substrate with a template, the method including, *inter alia*, forming conformable material on the substrate; placing the template in superimposition with the conformable material, with the template including a mold facing the conformable material; moving a sub-portion of the conformable material, through capillary action between the conformable material and one of the mold and the substrate, in a direction away from the substrate to wet a region of the mold and conform to a shape thereof, defining a complimentary shape; controlling movement between the substrate and the mold to minimize tensile forces, associated with the capillary action, upon the mold; and solidifying the conformable material.

Applicants respectfully contend that the argument set forth above with respect to claim 1 applies with equal weight here and that claim 22, as amended, defines an invention suitable for patent protection.

4. The Non-obviousness of the Dependent Claims

Considering that the dependent claims include all of the features of the independent claims from which they depend, these claims are patentable to the extent that the independent claims are patentable. Therefore, Applicant respectfully contends that the dependent claims define an invention suitable for patent protection.

Appl. No. 10/645,306
Amdt. dated November 2, 2005
Reply to Office action of August 4, 2005

Applicants respectfully request examination in view of the remarks. A notice of allowance is earnestly solicited.

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to the Commissioner for Patents.

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